

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Turtle Mountain Corporation

North Dakota Manufacturing Extension Partnership

At Turtle Mountain Corporation, Quality Means Business

Client Profile:

Turtle Mountain Corporation has been providing award-winning contract electronics manufacturing services to leading international commercial and electronics manufacturers since 1974. With annual sales of \$45 million and 375 employees, Turtle Mountain Corporation is ranked in the top 86 electronic manufacturing service providers in the world. Located in Dunseith, North Dakota, this company produces up to 100,000 units per year. Its high-mix products include pin-in-hole and surface mount parts, often on both sides of the printed circuit board. In 1996, the company received its ISO 9002 registration.

Situation:

Turtle Mountain Corporation (TMC) experienced an unplanned business growth spurt in 2001 that caused serious performance issues. For the first time, TMC's quality and on-time shipping rates suffered. The defect rate peaked at 60,000 parts per million (ppm), up from TMC's record lows of less than 2,000 parts per million (ppm). Anxious to resolve problems that could damage customer relations, TMC sent a representative to attend a Lean 101 workshop hosted by the North Dakota Manufacturing Extension Partnership (ND MEP), a NIST MEP network affiliate. After hearing what lean manufacturing could do, TMC decided to adopt a lean strategy in its plant, and asked ND MEP to guide this initiative.

Solution:

ND MEP conducted 12 lean training sessions for 253 employees on-site at TMC beginning in October 2001. Lean manufacturing is a systematic approach to identifying and eliminating waste by continuously improving operations. TMC also received Six Sigma training, which is a business and operational management system that emphasizes quality improvement applications to eliminate defects before they occur. As it became knowledgeable in the technique of value stream mapping, TMC realized the plant was very inefficient. In April 2002, TMC began working diligently to incorporate the lean concepts its employees had learned from ND MEP. By August 2002, TMC had made changes to the equipment and plant layouts and established cell manufacturing practices. Today, cells have ownership and accountability for the entire production cycle of their respective products. The company's overall defect rate has returned to its original levels, and TMC remains healthy and profitable.

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Results:

Reduced defect rate from 60,000 ppm to less than 2,000 ppm.

Retained more than \$10 million of business that could have been lost, along with the follow-on loss of employment.

Reduced cycle time to return on-time shipping to more than 95 percent.

Reduced inventory by 40 percent to improve the bottom line and save plant space.

Encouraged team ownership and increased productivity.

Made employees' jobs more interesting, thereby improving morale.

Improved overall customer satisfaction.

Testimonial:

"Without the North Dakota Manufacturing Extension Partnership and exposure to lean manufacturing concepts, we would have lost some major customers. We will continue to be on a continuous improvement journey. Lean manufacturing and Six Sigma will carry us a long way. We will always be looking for and making improvements."

Jodie Mjoen, Six Sigma Black Belt/Lean Manufacturing Manager